



## **T E C H N I C A L   B R I E F**

### **NHSRC Research Supports the WaterSentinel Initiative**

#### **Background**

EPA's National Homeland Security Research Center (NHSRC), headquartered in Cincinnati, Ohio, provides data, methods, guidance, tools, and technologies to enhance public safety and mitigate the adverse effects in the event of a terrorist attack. Through its research, NHSRC supports EPA's WaterSentinel Initiative. The overall goal of this initiative is to design and demonstrate an effective contamination warning system (CWS) for timely detection and appropriate response to drinking water threats and incidents. Additional information on the WaterSentinel Initiative is available at <http://www.epa.gov/ordnhsrc/news/news062105.htm>.

#### **Research Efforts**

An effective CWS will integrate monitoring and surveillance technologies, event detection methods, and consequence management plans in order to minimize potential public health and economic impacts.

Researchers will deploy CWSs to several U.S. cities for pilot testing. Ultimately, the WaterSentinel Initiative will enable drinking water utilities of all sizes and characteristics to adopt and implement an effective CWS. NHSRC supports the WaterSentinel Initiative by conducting research on system design, laboratory methods, and risk assessment and by developing and testing new tools and technologies.

To support the CWS design efforts, NHSRC conducts research on the use of water quality sensors. Researchers investigate the effectiveness of single- and multi-parameter sensors for detecting specific contaminants and develop tools for determining optimal sensor and sampling sites. They also develop sensor performance and acute health impact models. Faster, better, and less expensive laboratory methods are being developed to analyze biological and chemical agents. Risk assessment research includes public health surveillance and establishing health advisory levels as well as developing tools for communicating risks to emergency responders and the general public.

NHSRC thoroughly tests all new methods, technologies, and tools related to CWS development. Method validation studies as well as evaluations of on-line sensors, real-time modeling and decision support tools, and GSI-based response tools ensure that the warning systems will be both effective and efficient.

NHSRC is responsible for the overall evaluation of the WaterSentinel Initiative and is therefore involved in field, lab, and pilot studies to test CWS performance. Researchers also measure background contaminant levels, validate hydraulic models, and perform cost-benefit analyses.

(more)



**WaterSentinel Initiative Products**

The products of the WaterSentinel Initiative will include recommendations on effective approaches for detecting contamination events in drinking water systems.

**Expected Users and Benefactors**

Expected users of WaterSentinel Initiative products are drinking water utility operators.

For more information, visit the NHSRC Web site at [www.epa.gov/nhsrc](http://www.epa.gov/nhsrc).

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